

REMARKS

Upon entry of the present amendment, claims 1, 9 and 10 will be amended, and claims 1-15 will remain pending.

Claim 1 has been amended to more explicitly recite the defined width being determined and adjusted by the wire cross section of the wire having an essentially circular cross section and degrees of forming of further forming steps for the wire. Claims 9 and 10 have been amended so that their dependencies will be changed from claims 2 and 7 to claims 5 and 9, respectively, so as to address the objection to the claims as being duplicates.

Reconsideration of the rejections of record and allowance of the application in view of the following remarks are respectfully requested.

Claim of Foreign Priority

Applicants express appreciation for the acknowledgement of the claim of foreign priority as well as receipt of the certified copy of the priority application in this national stage application.

Information Disclosure Statement

Applicants also express appreciation for the Examiner's confirmation of consideration of Applicant's Information Disclosure Statement, filed December 14, 2006, by including an initialed copy of the Form PTO-1449 with the Office Action.

Response To Objection To Claims

Claim 9 is objected to as being a duplicate of claim 7 and claim 10 as being a duplicate of claim 8.

In response, claims 9 and 10 have been amended to depend upon claims 5 and 9, respectively.

Accordingly, this ground of objection should be withdrawn.

Response To Rejection Under 35 U.S.C. 112, Second Paragraph

Claims 6 and 12-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement by reciting “not including intermediate treatment of the wire.”

The rejection notes that the omitted “intermediate treatment” is mentioned on the following pages: page 4, third paragraph, page 5, second paragraph and page 9, last paragraph, but contends that one skilled in the art would not know what the intermediate treatment is referring to, especially page 7, line 27, “an intermediate annealing” step is disclosed as being a required step.

In response to this ground of rejection, Applicants submit that it is a particular advantage of Applicants’ invention that intermediate treatment of the wire during its production is not necessary. This provides technological advantages, as disclosed at page 5, lines 9-11. However, it is possible, though not necessary, according to Applicants’ invention to perform an intermediate treatment.

Examples 1, 2 and 4 relate to such intermediate treatment, which comprises intermediate annealing ("recrystallization annealing"). However, such intermediate treatment/intermediate annealing is not present in examples 3 and 5.

This intermediate treatment/intermediate annealing should not be confused with final annealing after the shaping of the wire (texture annealing), which is necessary to produce the cubic texture.

One skilled in the art knows that intermediate recrystallization annealing is essentially always carried out in general wire and strip production. This is where an advantage according to the present invention that this does not need to be (but can be) realized as part of the process according to the invention.

Accordingly, withdrawal of the rejection is requested.

Response To Rejection Under 35 U.S.C. 112, Second Paragraph

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection contends that in lines 8 and 9 of claim 1, "the wire" is indefinite. The rejection contends that this particular disclosure of the product appears to leave out the alternative, "a strip" as disclosed on line 7 of the claim, and that it also appears to be referring to the intermediate wire product that is drawn before the further processing steps.

In response, Applicants submit that this recitation is based upon the wire as recited in line 3 of the claim, and that one having ordinary skill in the art would understand the scope of the

claim. However, the claim has been amended to even more explicitly recite the subject matter implicitly included in the claim.

Accordingly, this ground of rejection should be withdrawn.

Response To Art Based Rejections

The following art based rejections are set forth in the Office Action.

(a) Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,106,825 to Mandigo et al. (hereinafter “Mandigo”) in view of U.S. Patent No. 4,495,691 to Masumoto et al. (hereinafter “Masumoto”) and U.S. Patent No. 6,715,331 to Zelin et al. (hereinafter “Zelin”) as best understood.

(b) Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandigo in view of Masumoto and Zelin in further in view of U.S. Patent No. 6,024,080 to Hodsden (hereinafter “Hodsden”), as best understood.

(c) Claims 3-4 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandigo in view of Masumoto and Zelin in further in view of U.S. Patent No. 4,280,857 to Dameron, Jr. et al. (hereinafter “Dameron”) and U.S. Patent No. 6,449,997 to Bertolini (hereinafter “Bertolini”), as best understood.

Initially, prior to discussing the merits of the rejections, Applicants note that the rejections are not complete and are without appropriate basis, because the rejections do not indicate how the documents are being combined, but merely sets forth the disclosures of the documents and an indication of asserted obviousness. Therefore, if the rejections are maintained, Applicants request that the rejections specifically indicate how the documents are being

combined, and why one having ordinary skill in the art would have combined the documents in the manner asserted in the rejections.

Applicants also note that the documents utilized in the rejections do not relate to the same materials, and the rejections do not indicate why one having ordinary skill in the art would have combined such diverse disclosures directed to different materials. For example, with respect to the documents utilized in each of the rejections, Mandigo is directed to superconducting materials, such as $\text{YBa}_2\text{Cu}_3\text{O}_x$; Masumoto is directed to iron and cobalt base alloys; and Zelin's example is a steel wire. The rejections do not address why one having ordinary skill in the art would have combined these diverse disclosures.

Regarding the disclosures of these documents, it does not appear that any of the documents teaches or suggests, as recited in Applicants' independent claim 1, a method for producing metallic flat wires or strips with a cube texture, comprising processing a material based on nickel, copper, gold, or silver into a wire having an essentially circular cross section by a cold drawing method with high-grade forming over multiple drawing stages, achieving a total cross-sectional reduction $\epsilon_g \geq 75\%$ or a logarithmic deformation $\phi_g \geq 1.4$, and then further processing the wire by further forming and annealing methods into a flat wire or a strip with a cube texture and having a width that can be adjusted in a defined manner, the defined width being determined and adjusted by the wire cross section of the wire having an essentially circular cross section and degrees of forming of further forming steps for the wire. For example, it does not appear that any of the documents teaches or suggest, amongst other features recited in Applicants' independent claim 1, a method for producing metallic flat wires or strips with a cube texture. Therefore, even if for the sake of argument, the disclosures of these documents are combinable, Applicants' claimed subject matter will not be present.

Mandigo discloses the production of a composite wire of ceramic and metallic powders in the core with a metal shell. Mandigo appears to be directed to wires with circular cross-sections. Mandigo does not teach or suggest a method for producing metallic flat wires or strips with a cube texture.

The process of drawing wire with a circular cross-section is used in production to a great extent as a process that has been known for a long time, but prior to the present invention has not hitherto been known for producing a cube texture

Cold rolling under the conditions of the flat state of strain has hitherto been the process of choice for obtaining cube texture as a recrystallization texture. However, coaxial deformation, such as occurs with wire drawing and as is realized with the present invention, has hitherto not been considered suitable in cold deformation for obtaining a cube texture.

Matsumoto discloses the production of amorphous metallic wires by melt spinning and subsequent cold drawing to form wires. This relates to the production of amorphous, non-crystalline alloys, and not to oriented polycrystals, as with flat wires or strips having cube texture. Matsumoto discloses a wire with an amorphous structure.

Zelin discloses a wire drawing method for steel wire with tapering individual reductions over many drawing stages. Zelin does not relate to a method for producing metallic flat wires or strips with a cube texture.

Hodsdon describes a sectioning method for silicon slices, and the rejection does not set forth why one having ordinary skill in the art would have combined the disclosure of Hodsdon with the other documents utilized in the rejection.

Bertolini describes a special process for wire drawing. This lies in carrying out the subsequent drawing stage with a wire-drawing die that has an opening angle of $>30^\circ$. The

lubricant film is thereby removed which was previously applied as a layer. The rejection must establish why one having ordinary skill in the art would have combined the disclosures in the manner asserted in the rejection.

Dameron describes a special cold-drawing method in which the wire is continuously annealed in a furnace before the last shaping step. Again, the rejection must establish why one having ordinary skill in the art would have combined the disclosures in the manner asserted in the rejection.

Applicants again note that none of the documents teaches or suggests shaping a wire in any manner to form a flat wire or strip, and certainly not to form flat wires or strips that have a cube texture after cold shaping and annealing. Applicants' claimed subject matter permits the production of flat wires or strips with cube texture starting from thick wires, which has hitherto been carried out only on the basis of rolled wide/flat products. The shaping texture formed during drawing surprisingly is no impediment to the development of the cube texture in the final annealing process. The necessity that has hitherto been presumed according to the prior art of a shaping texture that can be produced only by cold rolling, is circumvented with the recited method. The method makes it possible to use largely or even exclusively drawing machines for the production of substrates with cube texture.

In addition, none of the documents gives any indication of a cube texture. Therefore one skilled in the art would not arrive at the production of a cube texture even if for the sake of argument the documents were combined.

Accordingly, the rejections of record should be withdrawn, and each of the pending claims should be indicated to be allowable.

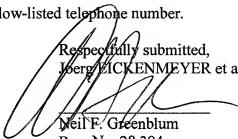
CONCLUSION

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections of record, and allow each of the pending claims.

Applicant therefore respectfully requests that an early indication of allowance of the application be indicated by the mailing of the Notices of Allowance and Allowability.

Should the Examiner have any questions regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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